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T. LONGBOTHAM

2,652,666

DRUM SANDER

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FIG. 1.

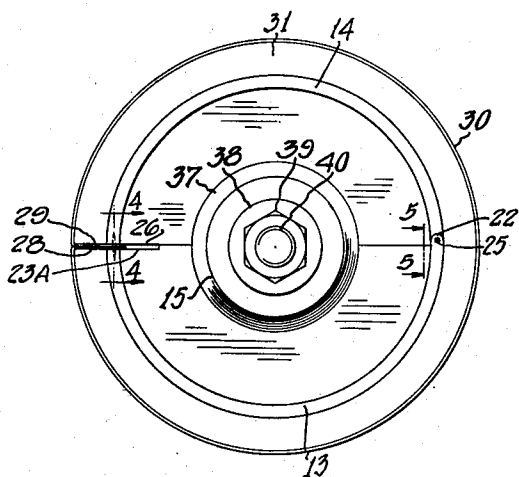


FIG. 2.

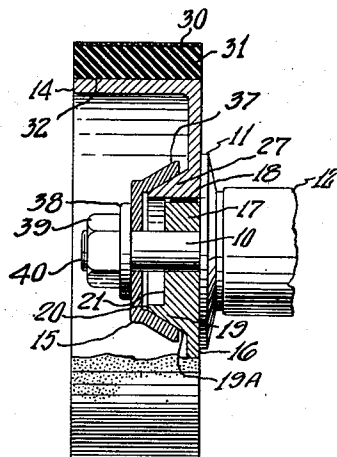


FIG. 3.

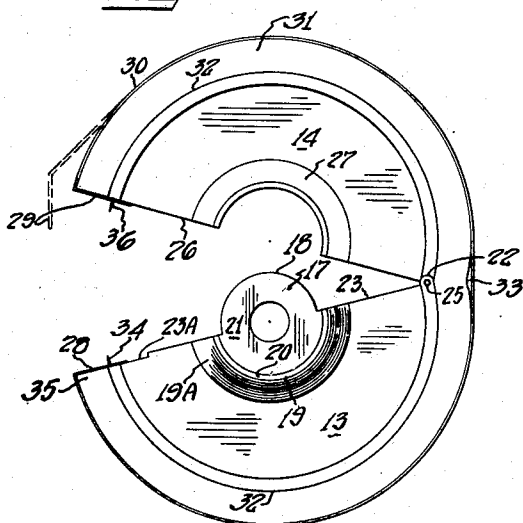


FIG. 4.

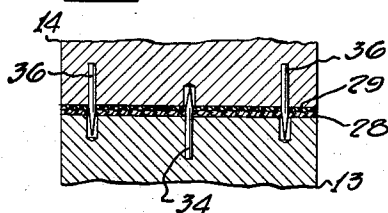
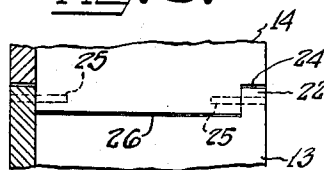


FIG. 5.



INVENTOR
THOMAS LONGBOTHAM

BY *E. A. Richman*
ATTORNEY

UNITED STATES PATENT OFFICE

2,652,666

DRUM SANDER

Thomas Longbotham, Portland, Oreg.

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1 Claim. (Cl. 51-194)

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This invention relates generally to drum sanders and a method of forming same and particularly to a means for mounting the resilient facing thereon.

The main object of my invention is to provide a drum for sanding purposes which will have a superior means for attaching the abrasive strip thereto in a manner which will cause it to lead around the drum without twisting or wrinkling the strip.

The second object is to construct the drum sander of but three principal parts which, when assembled, will permit the abrasive strip to be moved or replaced by merely moving a single nut and cone from the spindle of the lathe or flexible shaft on which the drum is mounted, thereby permitting the drum to be opened and giving complete access to the abrasive strip.

The third object is to construct a drum in a manner to adapt it to precision work and vibrationless rotation.

The fourth object is to devise a method of manufacturing the drums which will provide for the greatest accuracy when the drum is rotated at normal operating speed.

I accomplish these and other objects in the manner set forth in the following specifications as illustrated in the accompanying drawing, in which

Fig. 1 is a front elevation showing the drum in a closed position.

Fig. 2 is a side elevation of the drum with parts broken away in section.

Fig. 3 is a front elevation of the drum in open position.

Fig. 4 is a fragmentary section taken along the line 4-4 in Fig. 1.

Fig. 5 is a fragmentary section taken along the line 5-5 in Fig. 1.

Like numbers of reference refer to the same or similar parts throughout the several views.

Referring in detail to the drawing, there is shown a spindle 10 of an ordinary grinder head or flexible shaft on which spindle is placed a collar 11 which is either fixed to the spindle 10 or held against slipping by means of a shoulder on the spindle 10 near the grinder housing 12.

Referring particularly to my invention, it consists of three parts; namely, a fixed half drum 13, a movable half drum 14 and a clamping cone 15. The fixed half drum 13 has a straight side 16 which engages the collar 11. A complete central hub 17 encircles the spindle 10 and is integral with the part 13.

One half of the hub 17 has a semi-circular edge

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18 while the other half has a half cone 19 formed around it whose outer conical surface 19-A extends from the side 16 to the edge 20. The edge 20 extends beyond the face 21 of the hub 17.

The fixed half drum 13 has hinge ears 22 which extend beyond the face 23 of the member 13. The face 23 has an offset 23-A formed thereon which provides clearance for the abrasive strips.

The half drum 14 is the same shape as the member 13 except that it lacks the central hub 17 and has cut out portions 24 to receive the ears 22 to which the hub part 14 is held by means of the hinge pins 25.

It will be noted that the pins 25 are set back from the face 26 of the part 14. The half cone 27 of the part 14 is spaced from the edge 18 of the hub 17.

The ends 28 and 29 of the abrasive strip 30 occupy the space between the offset portion 23-A and the face 26. The strip 30 is compressed upon the band of synthetic rubber 31 which is vulcanized upon the cylindrical outer surfaces 32 of the combined parts 13 and 14.

It will be noted in Fig. 3 that there is a bridging action of the strip 30 across the valley 33 formed at the hinge line when the parts 13 and 14 are separated.

One of the things that contributes much to the perfect running of the drum is due to the fact that the resilient band is vulcanized in place to an oversize and ground to the true diameter while the drum is being rotated at its normal working speed as centrifugal force plays an important part in the shape of the rubber cylinder or band as it operates at different speeds.

In operation, when it is desired to apply the abrasive strip 30 to the drum, the parts 13 and 14 are open as shown in Fig. 3 and one end 28 of the strip 30 is pressed upon the central pin 34 which projects from the center of the offset face 23-A. The strip is then bent around the corner 35 and then stretched around the resilient surface 31 and the end 29 made fast to the two pins 36 on the face 26.

Holes are formed in the surfaces 23-A and 26 to receive the points of the pins 34 and 36. Now, as the parts 13 and 14 are moved together, the tension is increased at the bridge 33 and the entire drum is firmly held within the abrasive strip 30.

When the parts 13 and 14 are brought together, or nearly so, the conical collar 37 is put into place on the spindle 10 and the washer 38 and nut 39 on the threaded end 40 of the spindle 10 are used to force the collar 37 into position

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and secure the parts 13 and 14 together, accurately and rigidly in place against the collar 11.

It can be seen that by the use of only three principal parts 13, 14 and 37, the applicant has produced a highly satisfactory sanding drum, whereas existing devices of which Catt 733,577 is an example, employs not less than seven main parts and numerous screws to hold the parts together which, of course, is undesirable in high speed rotating parts.

I claim:

The combination of a spindle having a collar at one end and a threaded section at the other end thereof, a cylindrical drum mounted on said spindle, said drum having a closed side engaging said collar, the middle of said closed side constituting a hub through which said spindle extends, said drum being divided along its diameter into two sections and hinged along its cylindrical outer surface, the division in its closed side extending around said hub, leaving all of said hub in one portion of said drum and leaving a hub opening in the other portion of

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said drum, the inner face of said closed side having a frusto-conical hub divided along the diameter of said drum, a clamping cone on said frusto-conical hub having a central opening for said spindle and a nut on said spindle engaging said clamping cone and forcing said closed drum side against said spindle collar, the ends of said drum opposite its hinge having pins projecting from their engaging faces for fastening abrasive strips thereto, and a resilient cover for the cylindrical surface of said drum.

THOMAS LONGBOTHAM.

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